

FIG. 1

(PRIOR ART)

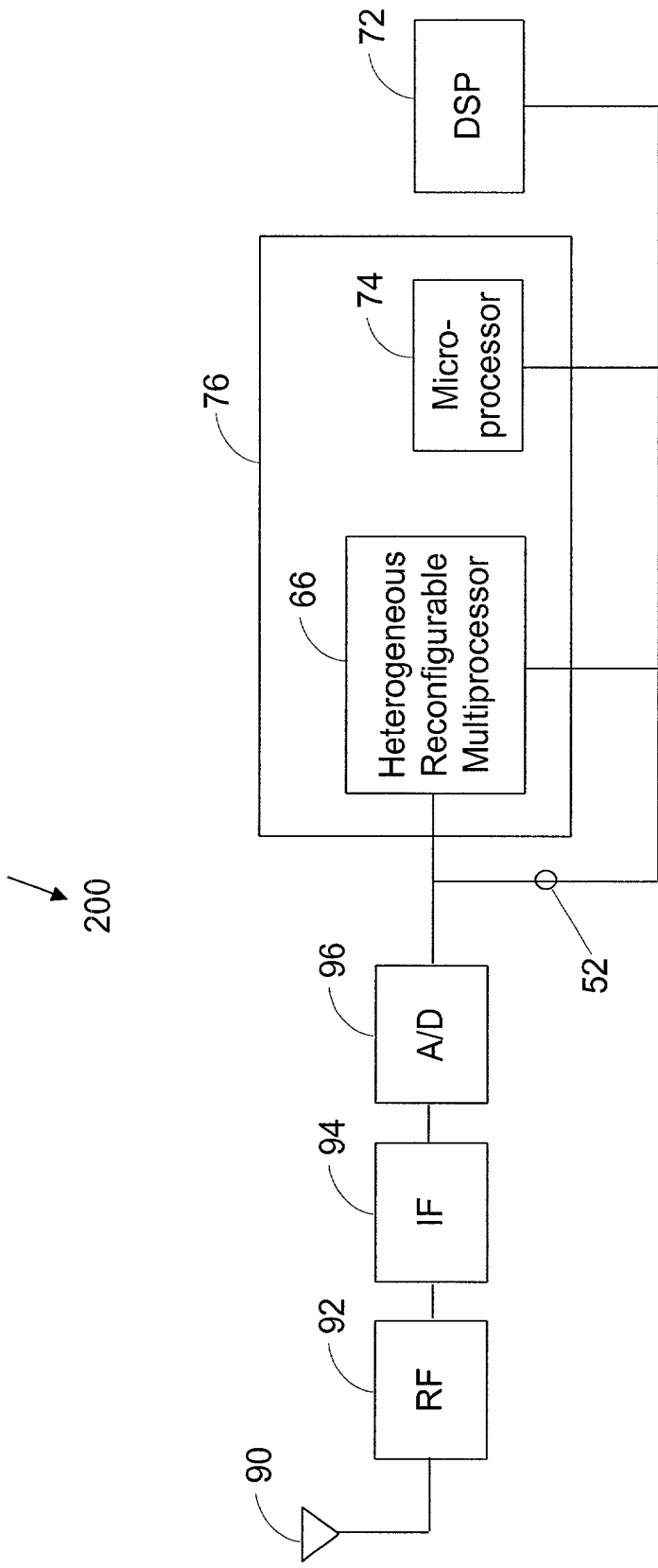


FIG. 2

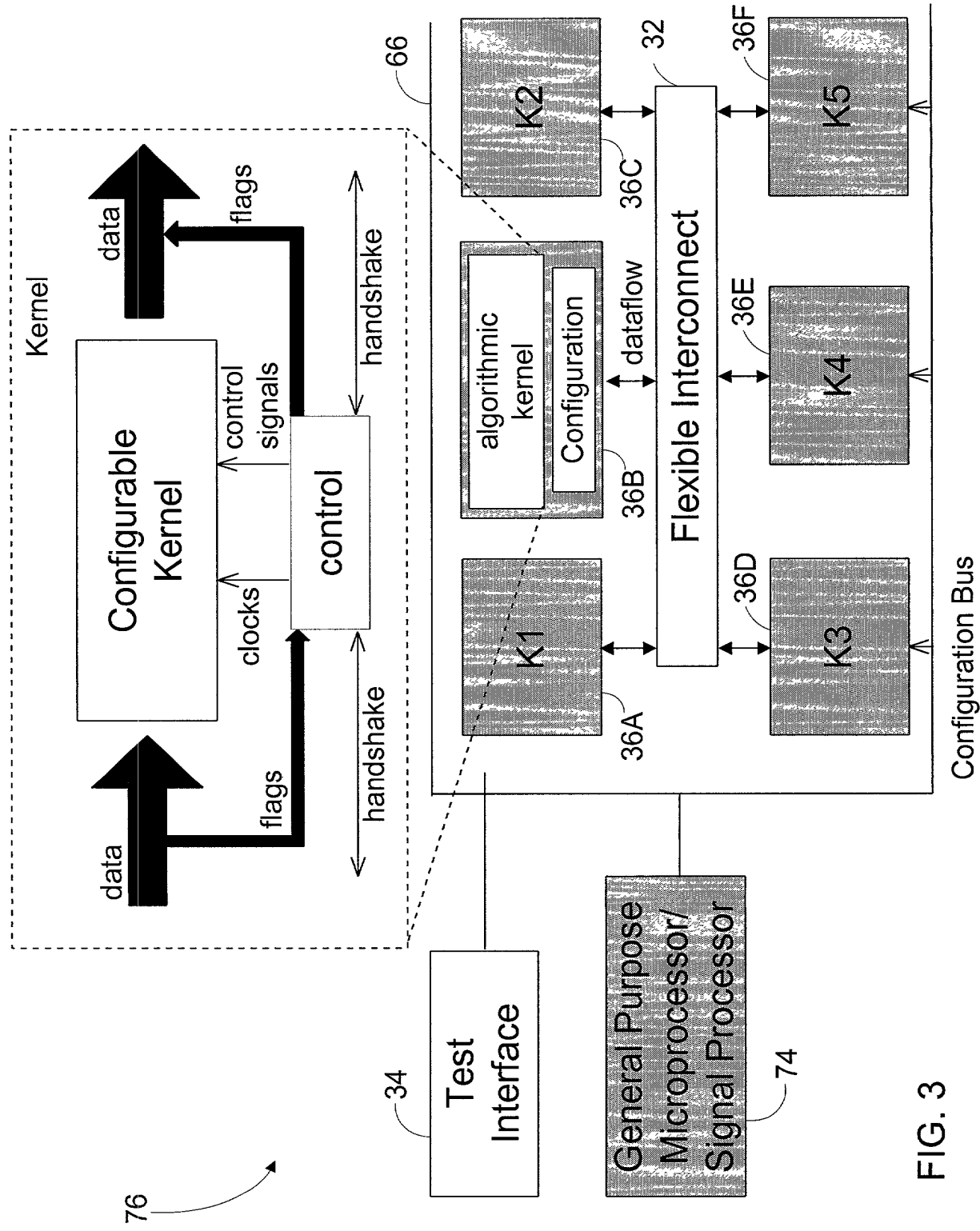


FIG. 3

76

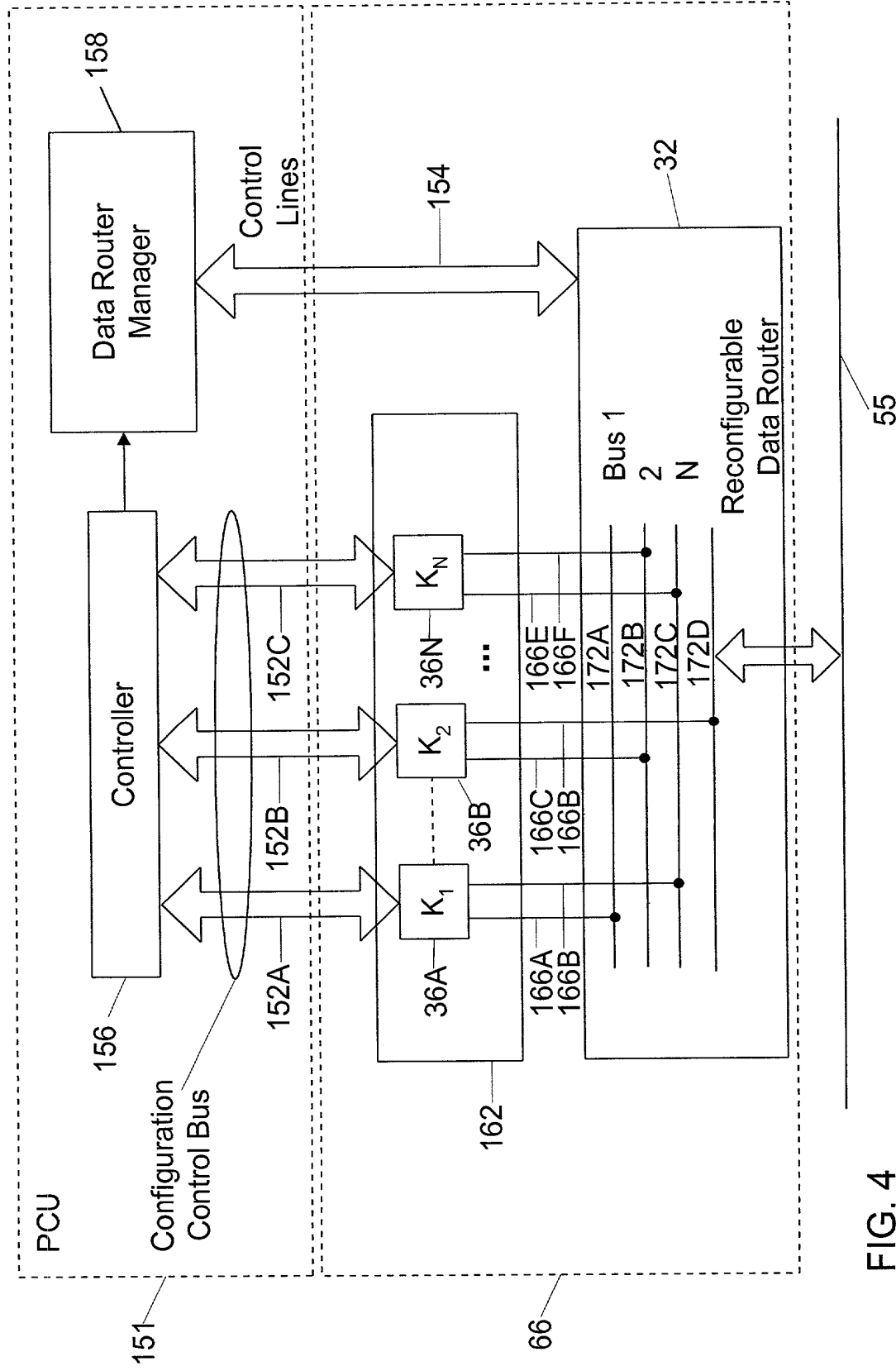


FIG. 4

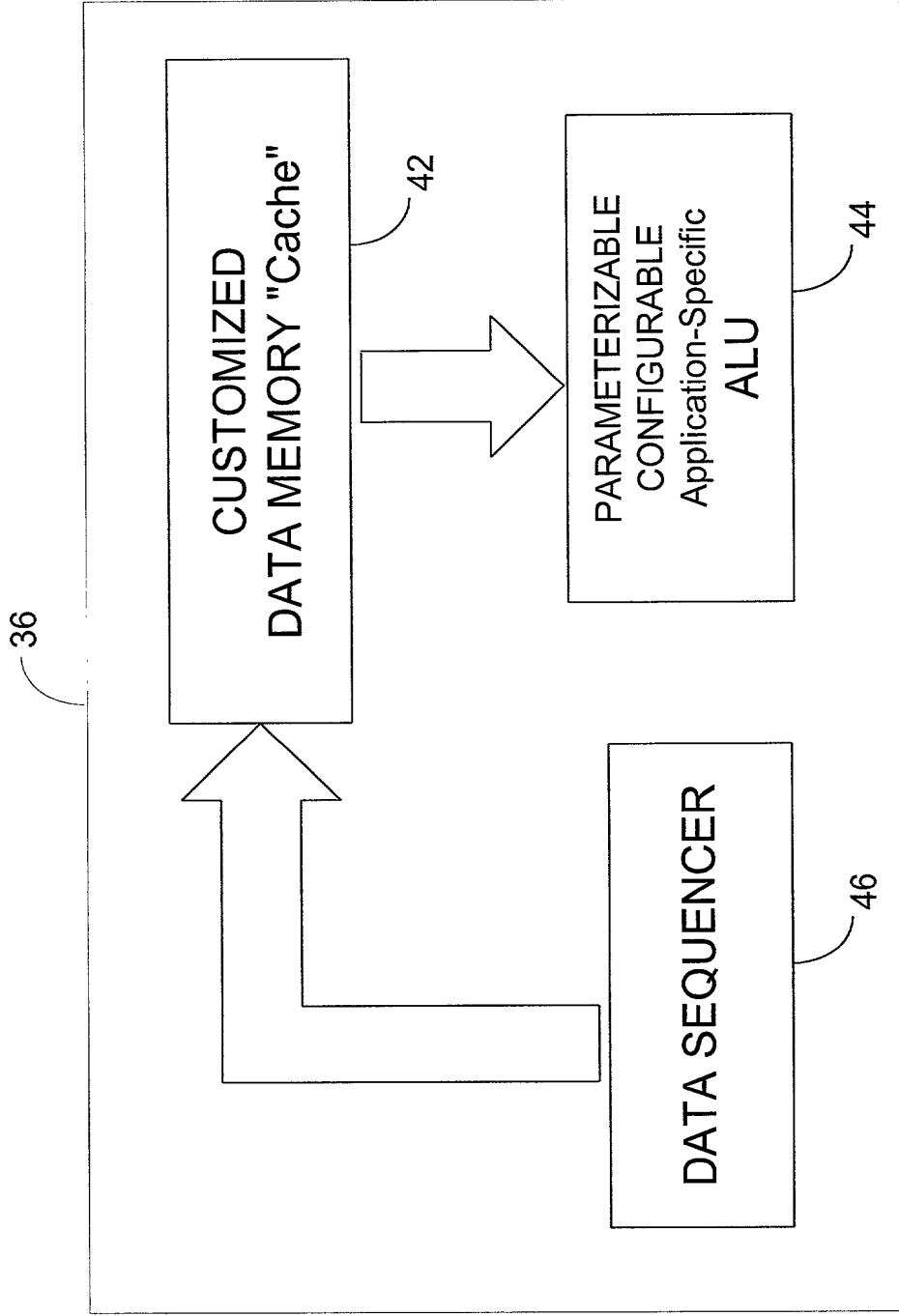
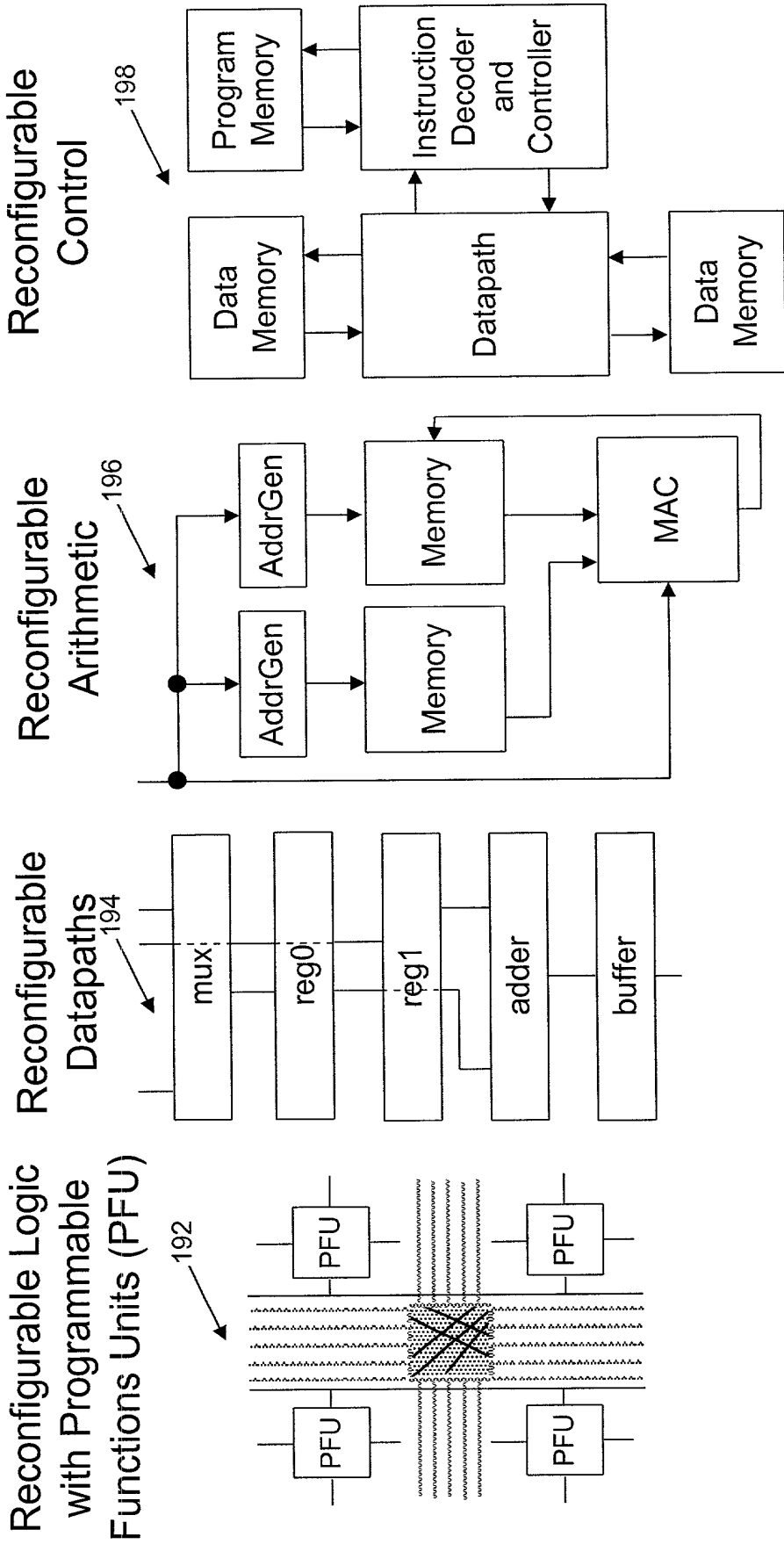


FIG. 5



Bit-Level Operations  
e.g. encoding

Dedicated data  
paths e.g. Filters,  
AGU

Arithmetic Operations  
e.g. Convolution

RTOS  
Process Management

FIG. 6

200

Signal Processing Functions

202	204A	204B	204C	204D	204E
	Rx Filer	Complex Despreader	Short Code	Scrambling	Walsh
CGU overhead			3	3	
DLL error signal (non coherent)		12		0	4
DLL error signal (coherent)		12			
Pilot	242		3		
R-FCH					4
R-DCCH		6		3	4
R-SCH 1					4
R-SCH 2					4

...

Data Paths

FIG. 7

220



	TDMA					CDMA				
	IS136	GSM	GPRS	EDGE	IS-95B	IS-2000	WCDMA-FDD	GPS	GLOBALSTAR	
Parameter Estimation Functions										
IMS Channel Estimator		X	X	X						
Windowed Average Energy Estimator	X	X	X	X	X	X	X			
ML Symbol Timing Estimator	X	X	X	X	X	X	X	X	X	
ML Carrier Phase Estimator	X	X	X	X	X	X	X	X	X	
PN Correlator						X	X		X	
Matched Filter							X	X		
Interference Energy Estimator						X	X			

FIG. 8



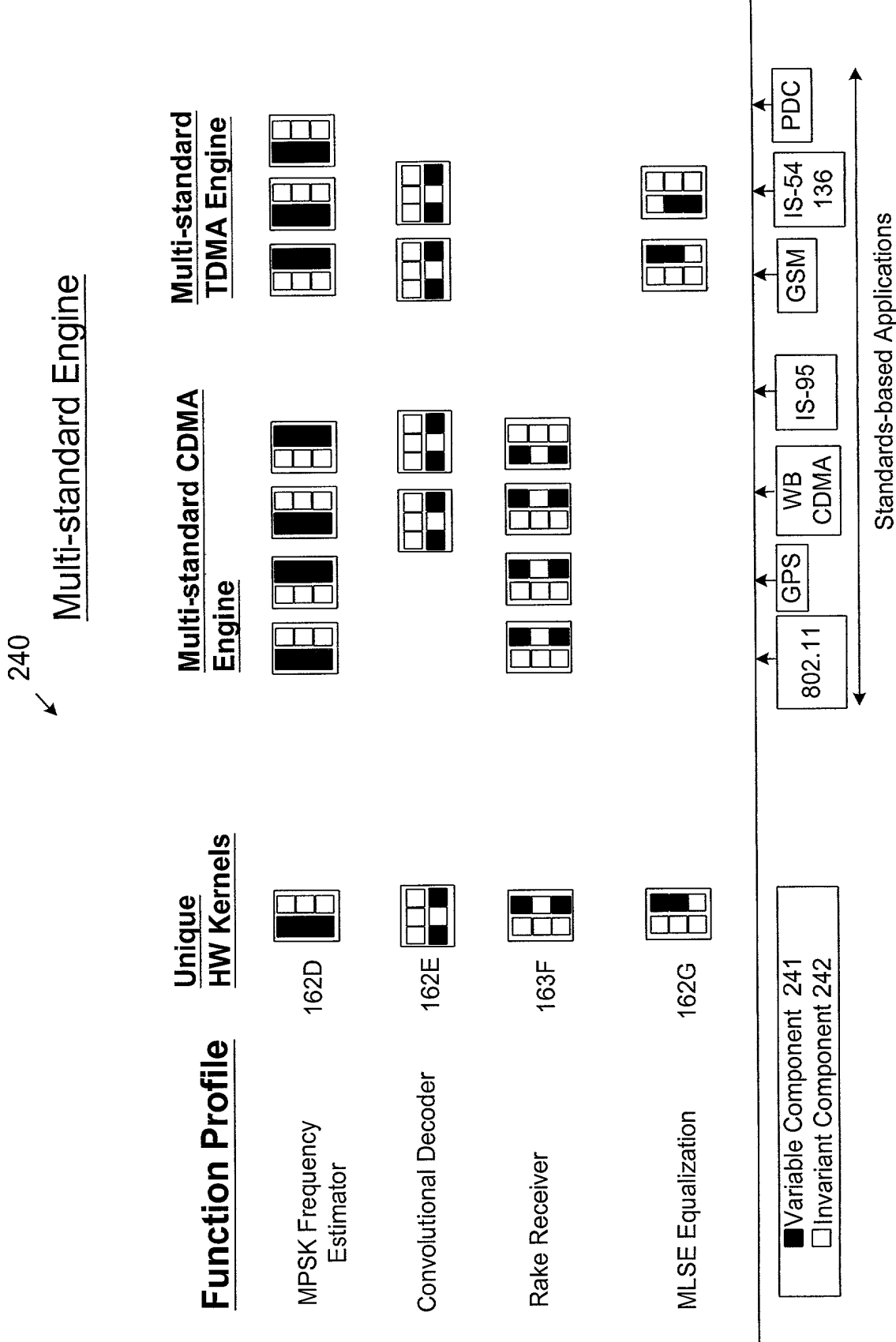
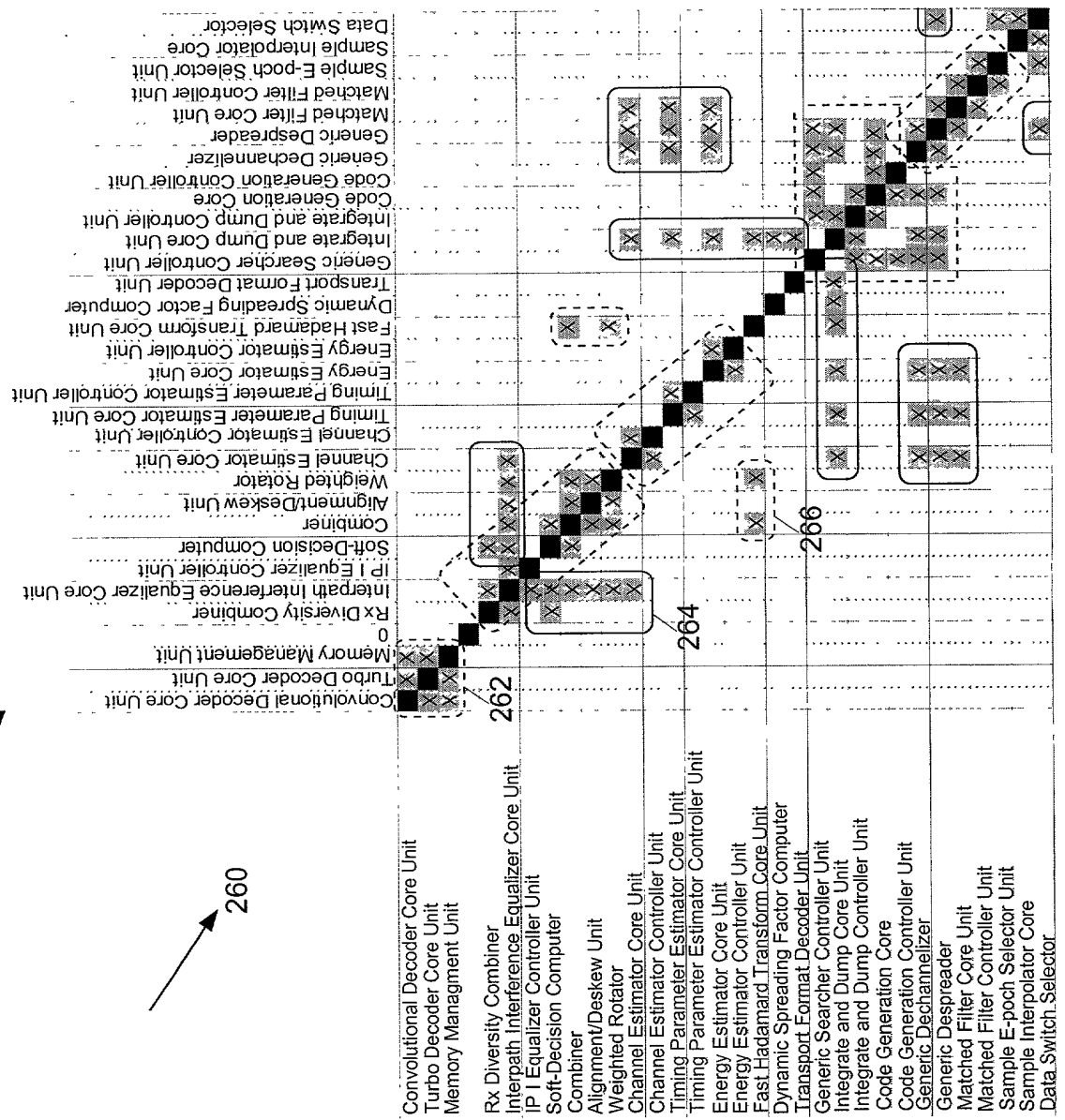


FIG. 9

Signal Processing Flow



Signal Processing Flow

FIG. 10

Application / Product Management

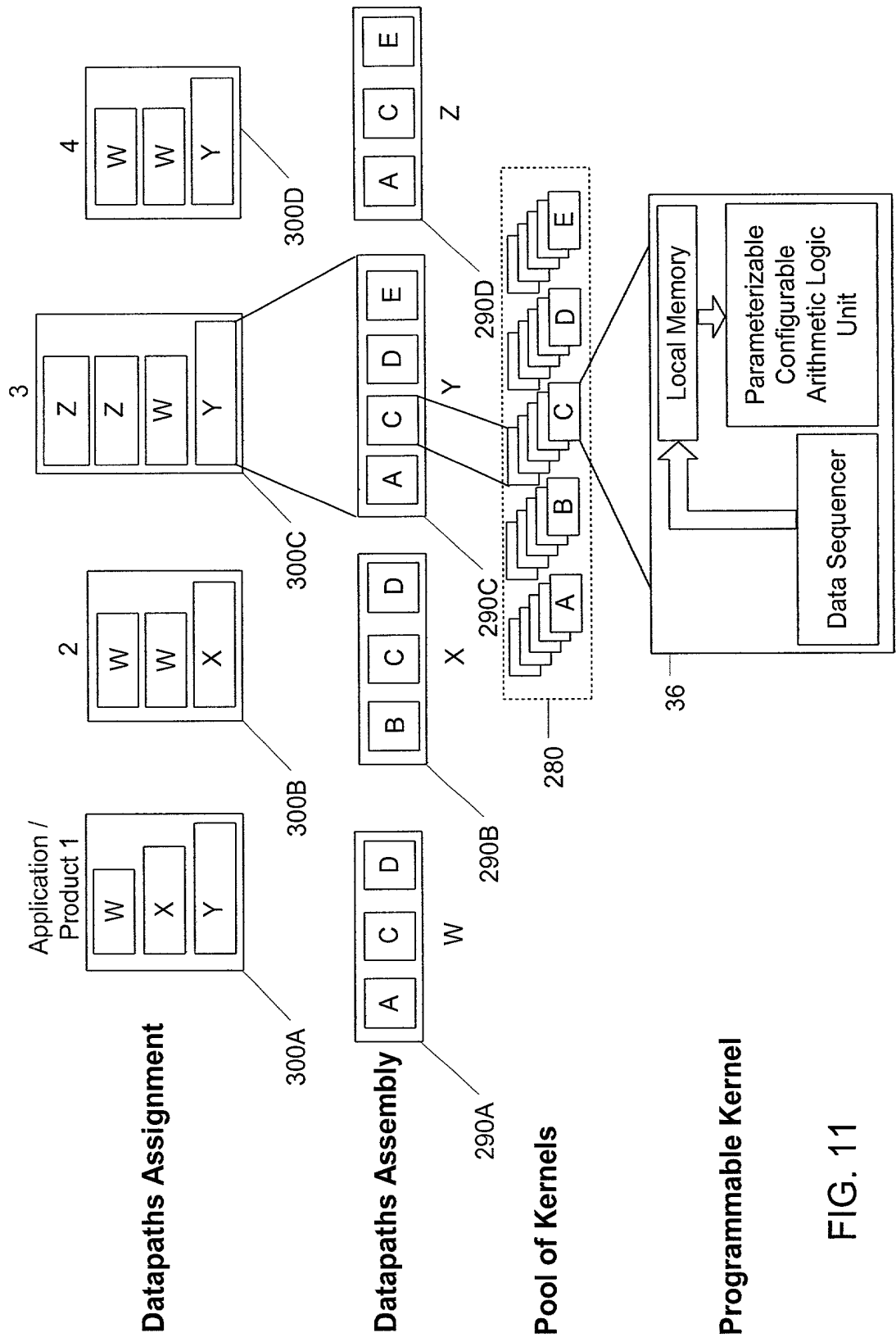


FIG. 11



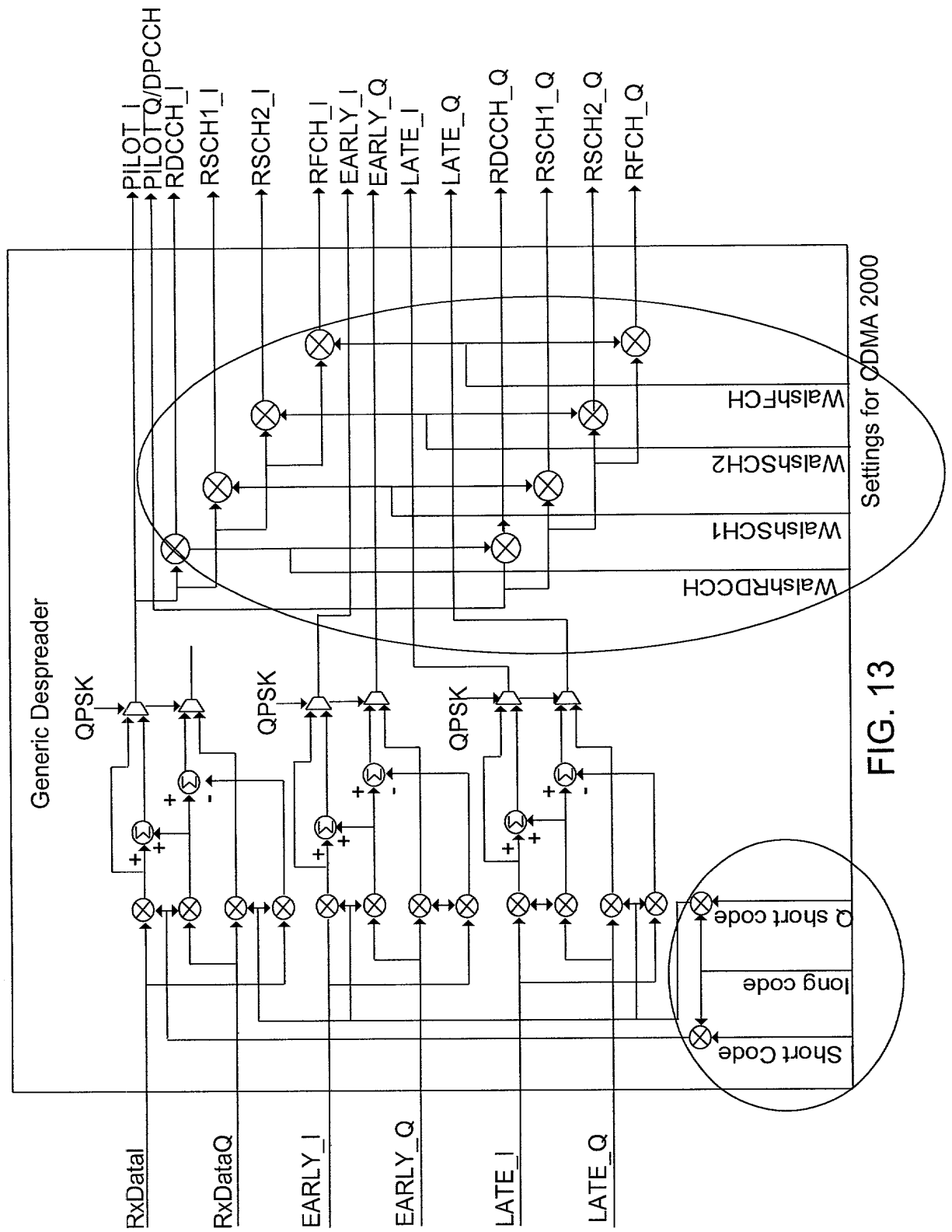
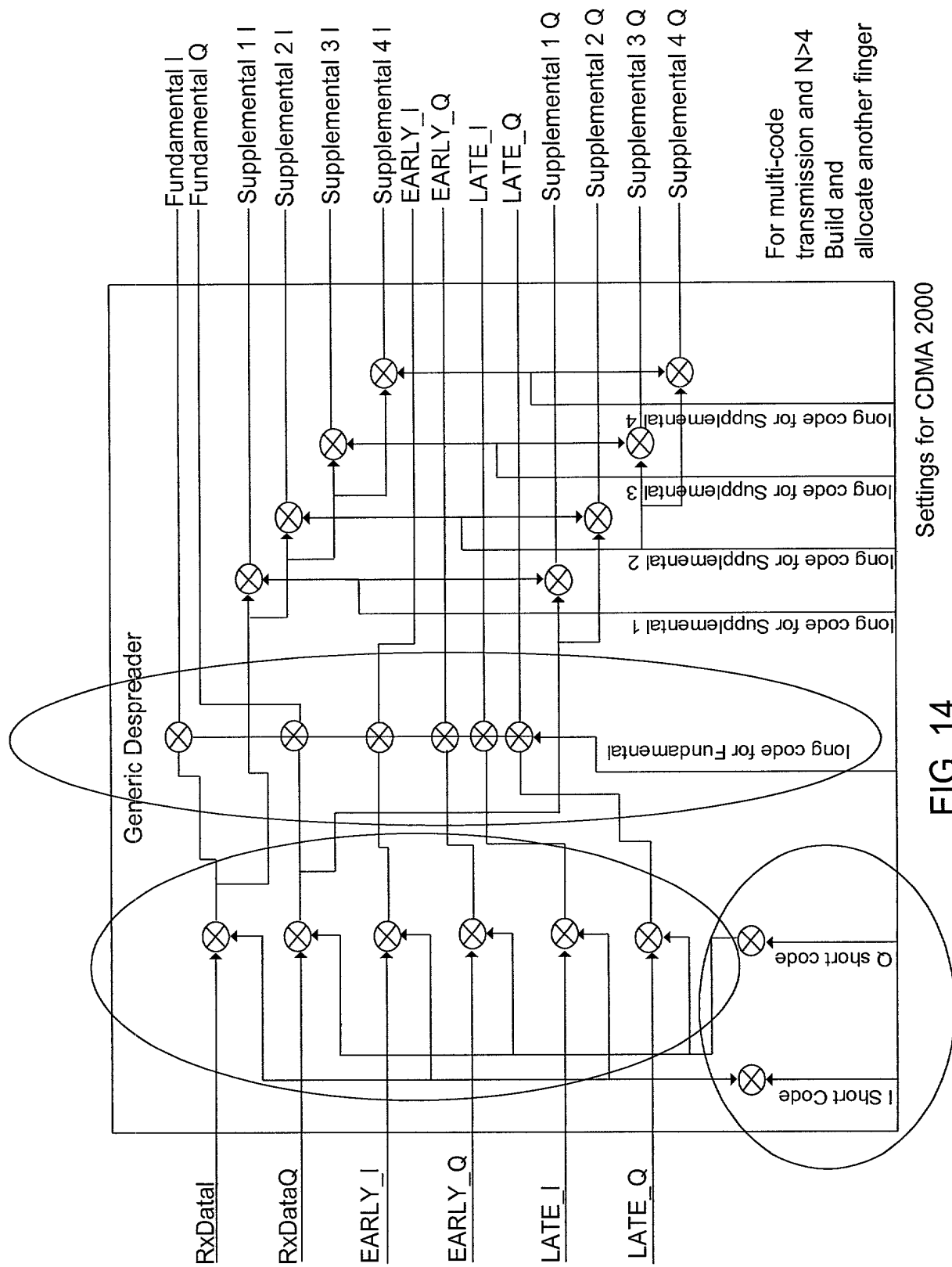


FIG. 13



Settings for CDMA 2000

FIG. 14

CDMA Computation Unit Library	
<i>Front End Processing</i> Sample Interpolation	<i>Parameter Estimation</i> Energy Estimator Timing Parameter Estimator Channel Estimator
<i>Chip Rate Processing</i> Sample Epoch Selection Matched Filter Generic Despreader Generic Dechannelizer Code Generation Unit Integrate and Dump Generic Searcher Control	<i>Channel Element Processing</i> Alignment/Deskewing Combiner Soft Decision Computer Interpath Interference Equalizer Receive Antenna Diversity Combiner
<i>Symbol Sequence Processing</i> Transport Format Decoder Dynamic Spreading Factor Computer Fast Hadamard Transform Rotator/Squarer	<i>Interleaving</i> Deinterleaver Controller
	<i>Channel Decoding</i> Turbo Decoder Convolutional Decoder

FIG. 15

TDMA Computer Unit Library	
<i>TDMA Modem Transmitter</i> Pulse-shaping Multiplexing	<i>TDMA Modem Receiver</i> Front-end Filtering Adaptive Demodulation
Link Adaptation (AMR) Antenna Transmit Diveristy	Synchronization Adaptive Parameter Estimation Diversity Combining Link Adaptation
<i>Channel Decoder</i> Reed Solomon Codes Decoding Fire Codes Decoding Decryption Deinterleaving	
	<i>Channel Encoder</i> Encoding Encryption Interleaving

FIG. 16



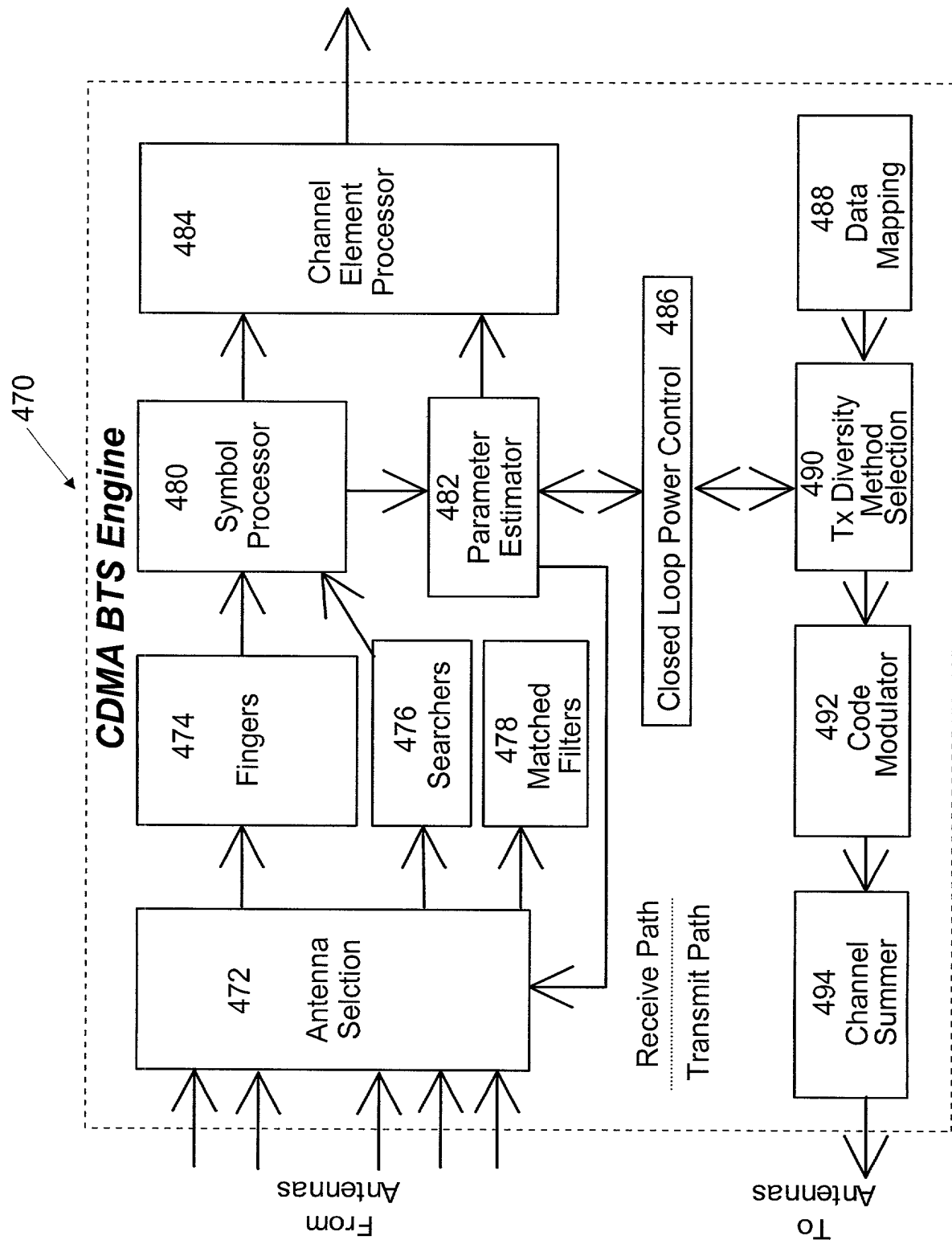


FIG. 17

500

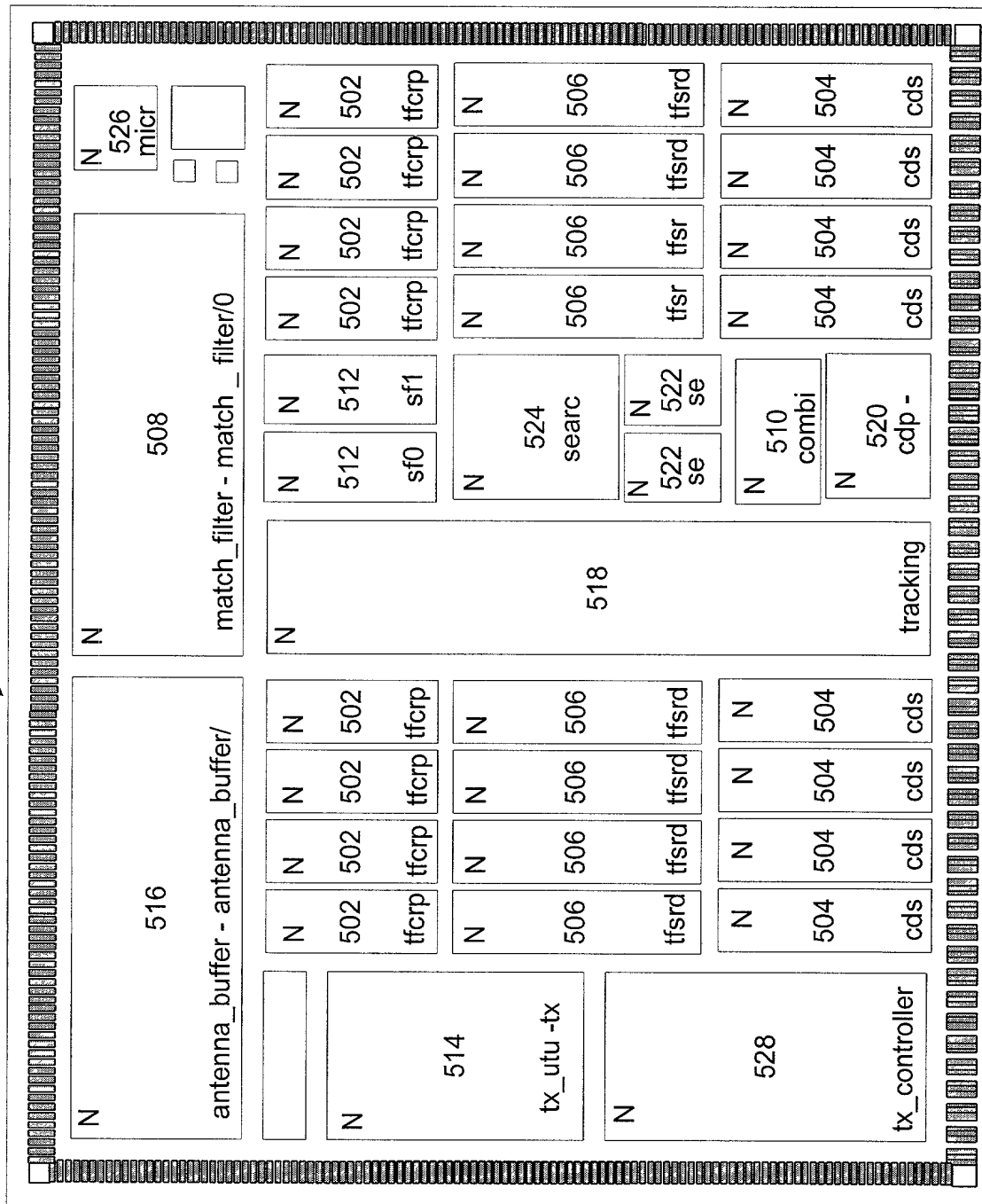


FIG. 18